Kanishk Tanotra

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Experience

Software Engineer — **Arizona State University** — Tempe, Arizona *Aug 2024 – Present*

- Designed and deployed scalable full-stack applications using Node.js for front-end services and Python for back-end logic, ensuring seamless integration and user experience.
- Optimized backend architecture to improve performance, reducing response times by 50% through efficient API design, database indexing, and resource management.
- Leveraged AWS cloud infrastructure (EC2, S3, Lambda, RDS) to deploy highly available and fault-tolerant applications, ensuring system scalability and reliability

Software Engineer Intern — **MathWorks** — Natick, Massachusetts *Aug 2022 – Dec 2022*

- Redesigned and optimized the backend of the Mixed-Signal Analyzer app in C++, improving user experience by 50% through enhanced responsiveness and performance by 30% via efficient resource utilization and algorithmic refinements.
- Developed robust Java APIs and services to automate the conversion of over 100,000 tr0, FineSim, SW, and AC0 files into MATLAB-readable formats, streamlining data analysis workflows.
- Integrated OpenGL for rendering interactive visualizations, improving graphical fidelity and real-time processing in mixed-signal analysis tools.
- Refined multithreading strategies with OpenMP, ensuring efficient CPU core utilization and scalability for computation tasks

Software Engineer Intern — **Truveta** — Bellevue, Washington *May 2022 – Aug 2022*

- Developed and deployed scalable microservices in C# using gRPC, optimizing Elasticsearch queries on Azure to enhance search functionality, resulting in a 10% improvement in query performance.
- Engineered a real-time progress bar service for precise query progress estimation, improving application usability.
- Designed and implemented interactive dashboards with Plotly, ipywidgets, and Matplotlib, increasing operational efficiency by 20
- Built an automated analytical query platform, deploying secure and efficient Docker containers via Azure DevOps pipelines, streamlining the application deployment process.

Software Engineer — **PwC** — Bangalore, India *July 2019 – Aug 2021*

- Developed and launched a React.js frontend portal for clients, enabling real-time tracking and recording of services, improving user experience and engagement.
- Implemented Java-based REST APIs for seamless and secure financial data exchange between PwC databases, Redis Cache, and MySQL, resulting in a 45% improvement in data management efficiency.
- Built workflows for approvals and automatic notifications via email and SMS, reducing response times by 25
- Collaborated in Agile teams, following SDLC best practices, to deliver high-quality features on schedule, tracked through JIRA for streamlined task management.

Skills

Languages	C++, C, Java, Python, C#, SQL, JavaScript, Bash, scala
Frameworks	.Node.js, React.js, Flask, OpenGL, .NET
Cloud/DevOps	AWS (EC2, S3, Lambda, RDS), Azure, Docker, Kubernetes, Jenkins
Tools	Git, JIRA, Elasticsearch, gRPC, REST APIs, Apache Airflow
Databases	MySQL, PostgreSQL, Redis, AWS Redshift

Education

Arizona State University *3.86/4.0*

Master of Science in Computer Science *Aug 2021 - May 2025*

Master of Science in Data Science, Analytics and Engineering *Jan 2024 - May 2025*

Projects

Disaster Response Coordination System Using LLM Agents — *Python, TypeScript, LLMs (GPT, Claude), AWS*

- Developed an AI-powered disaster response system using LLM agents to analyze real-time data and optimize resource allocation.
- Designed prompt engineering workflows to extract critical information from unstructured text (e.g., social media, emergency calls).
- Built a data visualization dashboard using TypeScript and D3.js to provide real-time situational awareness.
- Deployed the system on AWS (EC2, Lambda, S3).

AWS-Based Scalable Data Pipeline — *AWS Amplify, AWS EC2, AWS S3, AWS Lambda, AWS Redshift, CloudWatch*

- Developed a scalable data pipeline using AWS services like EC2, S3, Lambda, Redshift, and Amplify, automating real-time data processing, storage, and deployment with CloudWatch monitoring for enhanced reliability.

Human Activity Recognition — *Python, TensorFlow, PyTorch, Scikit-Learn*

- Developed a human activity recognition system for marathon using LSTM, CNN, Decision Trees and, achieving 99.8% accuracy.

Covid Symptoms tracking App — *Java, Android Studio*

- Created a user-friendly Android app in Java for recording COVID-19 symptoms, estimating heart and respiratory rates using camera, accelerometer, and orientation sensors, with an alert system.